

DOI: 10.5152/TurkThoracJ.2019.337

[Abstract:0258] PP-219 [Accepted: Poster Presentation] [Clinical Problems - Other]

## Pleural Effusion in Dasatinib-Treated Chronic Myeloid Leukemia Patients: Two Case Reports

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**Introduction:** Dasatinib is used as first and second-line tyrosine-kinase inhibitor (TKI) approved for treatment of chronic myeloid leukemia (CML). Pleural effusion (PE) is a common complication during dasatinib therapy (5%-28%).

**Case 1:** A 69-year-old male patient who had been diagnosed with CML for 17 years was referred to our clinic from hematology clinic due to detection of pleural fluid. He presented with dyspnea, fever, orthopnea. He had been treated with dasatinib for a year but treatment was interrupted due to dasatinib-associated PE. He started to take dasatinib treatment 3 months ago. Physical examination revealed no breathing sounds and rales were available. Chest X-ray revealed a left sinus blunt, right parabolic opacity and computed tomography (CT) revealed bilateral PE. He was referred for a thoracentesis from the right hemithorax under ultrasound guidance and exudative serous fluid was aspirated. Lymphocytic inflammation was seen in pleural fluid cytology. Oral methylprednisolone 32 mg was given. Regression was observed in the posterior anterior chest X-ray on the 10th day of the treatment.

**Case 2:** A 68-year-old woman had a 5-month history of dyspnea. She presented cough, orthopnea and paroxysmal nocturnal dyspnea. The patient had been using dasatinib for 6 years with the diagnosis of CML. Physical examination revealed bilateral basal rales. Arterial blood gas was hypoxemia. Chest X-ray revealed right sinus blunt, left lower and middle zone opacity and CT revealed bilateral PE. She was referred for a thoracentesis from the left hemithorax. The pleural fluid was serous with an exudative character. Lymphocytic inflammation was seen in fluid cytology. The patient was consulted with hematology unit and dasatinib was discontinued. Prednisolon 20 mg intravenous (iv) and furosemid 20 mg (iv) was given. On the 6th day of treatment, the patient did not need oxygen and the pleural fluid was lost in the posterior anterior chest X-ray.

**Conclusion:** Dasatinib-associated PE are commonly exudative and the pathogenic mechanisms unclear. The predominance of lymphocytes in most cases suggests an immunological mechanism. Pulmonary reactions such as pulmonary hypertension, pulmonary edema and pneumonia may also occur. Dose reduction, temporary drug interruption or alternative TKI are recommended for PE treatment. Steroid and diuretic treatment is recommended for symptomatic and persistent fluids. However, there is no definitive evidence-based treatment for dasatinib-associated PE. Patients using dasatinib treatment should be closely monitored for the possible pulmonary complications.

**Keywords:** Chronic myeloid leukemia, dasatinib, pleural effusion